WE CLAIM:

1.   In a RAID data storage system comprising a stripe, wherein the stripe comprises stripe units $B_1 - B_{max}$, a method comprising:

receiving a request to read data from stripe unit B_x, wherein B_x is one of stripe units $B_1 - B_{max}$, wherein the request is received from a computer system in data communication with the RAID data storage system;

reading stripe parity P corresponding to stripe units $B_1 - B_{max}$ in response to receiving the request;

generating new stripe parity P_{new} corresponding to stripe units $B_1 - B_{max}$ as a function of data of each of the stripe units $B_1 - B_{max}$;

comparing the new stripe parity P_{new} with the stripe parity P.

2.   The method of claim 1 wherein the RAID data storage system comprises a parity RAID data storage system.

3.   The method of claim 2 wherein the parity RAID data storage system comprises a RAID-5 data storage system.

4.   The method of claim 1 further comprising returning stripe unit B_x data to the computer system if the stripe parity P compares equally to the new stripe parity P_{new}.

5.   The method of claim 1 further comprising:

if stripe parity P does not compare equally to new stripe parity P_{new}:

reading checksum CS data from memory, wherein the checksum CS data corresponds to stripe units $B_1 - B_{max}$;

(a) generating new data for stripe unit B_y, one of the stripe units $B_1 - B_{max}$ as a function of checksum CS data and data of stripe units $B_1 - B_{max}$ other than stripe unit B_y;

(b) generating new checksum CS_{new} data as a function of the new data for stripe unit B_y and data of stripe units $B_1 - B_{max}$ other than stripe unit B_y;

(c) comparing new checksum CS_{new} data with checksum CS data;

(d) overwriting data of stripe unit B_y with the new data of stripe unit B_y if new checksum CS_{new} data compares equally to checksum CS data.

6.   The method of claim 5 further comprising changing the value of variable y and repeating (a) – (d) if new checksum CS_{new} data does not compare equally with checksum CS data.

7.   A computer readable medium storing instructions executable by a first computer system in a RAID data storage system, wherein the RAID data storage system comprises a stripe, wherein the stripe comprises stripe units $B_1 - B_{max}$, wherein the first computer system performs a method in response to executing instructions stored on the computer readable medium, the method comprising:

reading stripe parity P corresponding to stripe units $B_1 - B_{max}$ in response to receiving a request to read data from stripe unit B_x, wherein B_x is one of $B_1 - B_{max}$, wherein the request is received from a second computer system in data communication with the first computer system;

generating new stripe priority P_{new} corresponding to stripe units $B_1 - B_{max}$ as a function of data of each of the stripe units $B_1 - B_{max}$;

comparing the new stripe parity P_{new} with the stripe parity P.

8.   The computer readable medium of claim 7 wherein the RAID data storage system comprises a parity RAID data storage system.

9.   The computer readable medium of claim 8 wherein the parity RAID data storage system comprises a RAID-5 data storage system.

10.   The computer readable medium of claim 7 wherein the method further comprises returning stripe unit B_x data to the computer system if the stripe parity P compares equally to the new stripe parity P_{new}.

11. The computer readable medium of claim 7, wherein the method further comprises:

if stripe parity P does not compare equally to new stripe parity P_{new}:

reading checksum CS data corresponding to stripe units $B_1 - B_{max}$;

(a) generating new data for B_y, one of the stripe units $B_1 - B_{max}$, as a function of checksum CS data and data of stripe units $B_1 - B_{max}$ other than stripe unit B_y;

(b) generating new checksum CS_{new} data as a function of the new data for stripe unit B_y and data of stripe units $B_1 - B_{max}$ other than stripe unit B_y;

(c) comparing new checksum CS_{new} data with checksum CS data;

(d) overwriting data of stripe unit B_y with the new data of stripe unit B_y if new checksum CS_{new} data compares equally to checksum CS data.

12. The computer readable medium of claim 11 wherein the method further comprises changing the value of y and repeating (a) – (d) if new checksum CS_{new} data does not compare equally with checksum CS data.

13. A data processing system comprising:

a RAID data storage system comprising a stripe, wherein the stripe comprises stripe units $B_1 - B_{max}$;

a first computer system for receiving a receiving a request to read data from stripe unit B_x, wherein B_x is one of $B_1 - B_{max}$, wherein the request is received from a second computer system in data communication with the first computer system, wherein the first computer system comprises a computer readable medium that stores instructions executable by the first computer system, wherein the first computer system performs a method in response to executing the stored instructions, the method comprising;

reading stripe parity P corresponding to stripe units $B_1 - B_{max}$ in response to receiving the request;

generating new stripe priority P_{new} corresponding to stripe units $B_1 - B_{max}$ as a function of data of each of the stripe units $B_1 - B_{max}$;

comparing the new stripe parity P_{new} with the stripe parity P;

returning stripe unit B_x data to the computer system if the stripe parity P compares equally to the new stripe parity P_{new}.

14.   A data processing system comprising:

a RAID data storage system comprising a stripe, wherein the stripe comprises stripe

units $B_1 - B_{max}$, a method comprising:

means for receiving a request to read data from stripe unit B_x, wherein B_x is one of B_1

$- B_{max}$, wherein the request is received from a computer system in data

communication with the RAID data storage system;

means for reading stripe parity P corresponding to stripe units $B_0 - B_{max}$ in response to

receiving the request;

means for generating new stripe priority P_{new} corresponding to stripe units $B_1 - B_{max}$

as a function of data of each of the stripe units $B_1 - B_{max}$;

means for comparing the new stripe parity P_{new} with the stripe parity P;

means for returning stripe unit B_x data to the computer system if the stripe parity P

compares equally to the new stripe parity P_{new}.

15.   A computer readable medium storing instructions executable by a first

computer system in a RAID data storage system, wherein the RAID data storage system

comprises a stripe, wherein the stripe comprises a plurality of stripe units $B_1 - B_n$, wherein

the first computer system performs a method in response to executing instructions stored on

the computer readable medium, the method comprising::

generating parity P as a function of data from each of stripe units $B_1 - B_n$ of the stripe;

storing parity P in stripe unit B_{n+1} of the stripe;

generating error correction data as a function of data from one of the stripe units $B_1 -$

B_n;

storing the error correction data in memory.